UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,478	02/05/2004	Barry Linkert	1578.197 (10879-US-PAT)	4973

44208   7590   07/23/2010
DOCKET CLERK
Kelly-Krause
PO BOX 12608
DALLAS, TX 75225

EXAMINER
BETIT, JACOB F

ART UNIT	PAPER NUMBER
2169	

NOTIFICATION DATE	DELIVERY MODE
07/23/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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portfolioprosecution@rim.com

	Application No.	Applicant(s)
Office Action Summary	10/772,478	LINKERT ET AL.
	Examiner	Art Unit	
	Jacob F. Bétit	2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *12 April 2010*.
2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-14 and 21-29* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-14, 21-26, 28 and 29* is/are rejected.
7) ☒ Claim(s) *23 and 27* is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1.   In response to communications filed on 12 April 2010, claims 1, 5, 8, 11-13, and 21-23

have been amended and claims 27-29 have been added per the applicant's request. Claims 1-14

and 21-29 are presently pending in the application.

2.   In the Remarks section of the applicant's response, the applicant indicates that claim 24 is

cancelled, however, this is not reflected in the listing of claims.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 1-14, 21, 22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Yianilos et al. (U.S. patent application publication No. 2002/0029214 A1) in view of

McCullough (U.S. patent No. 7,054,618 B1).

        As to claim 1, Yianilos et al. teaches an apparatus of a radio communication system

embodied at a mobile node and comprising:

        a request detector, the request detector capable of detecting requests for hash information

and requests for data records (see paragraph 0083 "Get_Interval_Hashes"; "Get_All_Hashes";

and paragraph 0081, "records are transferred which need to be transferred to make the databases

synchronized");

a hash generator coupled to the request detector and receiving therefrom, requests for hash information, said hash generator capable of forming first and second hash values of data received by said hash generator from a database, the hash generator generating a first -hash value that is computed over the database responsive to a first request received by the hash generator from the request detector, the first hash value being formed for communication to a network part to determine whether a network-copy and the mobile-copy of the database are in match with one another (see paragraph 0083, "a single summary of all records lying in the given key interval" where the key interval could include all keys in the database and "Get_Interval_Hashes"), said second hash value being computed over an individual record of the plurality of databases and communicated to the network part, after said first hash value has been computed and communicated to the network part and used by the network part to determine that the network-copy and the mobile-copy are not in match with one another the second hash value being generated by the hash generator responsive to the receipt by the request detector of a second request for additional hash information, a second request for additional hash information being received by the request detector only if the mobile copy of the first hash value does not match the network copy of the first hash value (see paragraph 0083, if the summaries do not match and only a small number of records are in the key interval "then digests for all those individual records are transferred from the remote to the local side" and "Get_All_Hashes"); and

a content retriever coupled to said request detector, said content retriever retrieving data records from the mobile-copy of the database responsive to requests received by said content receiver from the request detector, data records retrieved by said content retriever for communication to the network part, and used by the network part to synchronize the network-

copy and the mobile-copy to each other (see paragraph 0081, "only those records are transferred which need to be transferred to make the databases synchronized").

While Yianilos et al. teaches a limited bandwidth connection (see paragraph 0080), Yianilos et al. does not distinctly disclose receiver circuitry, capable of receiving radio signals or the request detector being coupled to the receiver circuitry. Yianilos et al. also does not disclose wherein the plurality of databases is implemented in an extensible mark-up language (XML) format.

McCullough teaches receiver circuitry, capble of receiving radio signals and request detector being coupled to the receiver circuitry (see figure 1, reference numbers 107A, 107B, 108A, 108B, and 108C and see column 5, lines 3-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Yianilos et al. to include the teachings of McCullough because these teachings would allow databases on a cellular telephone to be synchronized with a database across a network.

McCullough also teaches the first database is implemented in an extensible mark-up language format (see column 5, lines 16-29). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Yianilos et al. to include this because it would allow mobile devices to use XML data to store and display data.

Yianilos et al. still does not distinctly disclose a plurality of databases, but this is simply a multiplication of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have multiple databases to provide areas for storing different types of information since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.*

Alternatively, Yianilos et al. teaches synchronizing based on a range of memory addresses which can be a single file or a raw disk environment. When synchronizing based on memory addresses, it would be obvious multiple databases (XML files) that are stored in the memory blocks of a mobile device would be synchronized (see paragraphs 0014-0016).

As to claim 2, Yianilos et al. as modified teaches wherein said hash generator generates the first hash values responsive to an external triggering event, occurrence of which is detectable at the mobile node (see Yianilos et al. paragraph 0083).

As to claim 3, Yianilos et al. as modified teaches wherein said hash generator generates the second hash values responsive to an external triggering event, occurrence of which is detectable at the mobile node (see Yianilos et al. paragraph 0083).

As to claim 4, Yianilos et al. as modified teaches wherein said hash generator generates the first hashes upon detection of an external triggering event, the occurrence of which is detectable at the mobile node and wherein said hash generator generates the second hashes responsive to a network part determination that the first hashes, generated by said hash generator did not match a first hash generated by the network part (see Yianilos et al. paragraph 0083).

As to claim 5, Yianilos et al. as modified teaches wherein the data maintained at the network-copy and the mobile-copy of the plurality of databases is comprised of data records, each data record being comprised of fields including at least a first key field and at least a first

record field, and wherein the second hashes selectably generated by said hash generator are formed of values of the at least the first key field (see Yianilos et al. paragraph 0069).

As to claim 6, Yianilos et al. as modified teaches wherein the determination that the network-copy and the mobile-copy are out of match is made responsive to values of the second-type hashes formed of the values of the at least the key field (see Yianilos et al. paragraphs 0069 and 0083).

As to claim 7, Yianilos et al. as modified teaches wherein the data retrieved by said content retriever comprises both the at least the first key field and the at least the first record field (see Yianilos et al. paragraphs 0069).

As to claim 8, Yianilos et al. as modified teaches wherein the network part comprises:

a determiner embodied at the network part and which receives hash values generated by said hash generator embodied at the mobile node, said determiner determining whether the hash values generated by the hash generator at the mobile node, match with corresponding hash values generated at the network part (see Yianilos et al. paragraph 0083); and

a requestor coupled to said determiner and receiving indications that a hash value from the mobile node does not match a corresponding hash value generated at the network part, said requester requesting from the mobile node, additional information associated with the mobile-copy of at least one of the plurality of databases (see Yianilos et al. paragraph 0067).

As to claim 9, Yianilos et al. as modified teaches wherein the hash values generated at the network part include said first hash value and said second hash value (see Yianilos et al. paragraph 0067 and 0083).

As to claim 10, Yianilos et al. as modified teaches wherein the additional information requested by said requestor comprises a request for the mobile node to deliver the second hash value to the comparator (see Yianilos et al. paragraph 0083).

As to claim 11, Yianilos et al. as modified teaches wherein the data maintained at the network-copy and the mobile-copy of the plurality of databases is comprised of data records and wherein the additional information requested by said requestor comprises a request for the mobile node to deliver at least portions of the data records (see Yianilos et al. paragraph 0067).

As to claim 12, Yianilos et al. as modified teaches further comprising a comparator receiving from the mobile node, data records or portions thereof and adapted to compare data records or portions thereof from the mobile node, to corresponding values of the network-copy of at least one of the plurality of databases (see Yianilos et al. paragraphs 0081-0082).

As to claim 13, Yianilos et al. as modified teaches further comprising a database value updater coupled to said comparator, said database value updater being responsive to comparisons made by said comparator to alter at least one data record of a selected one of the mobile-copy

and the network-copy of the plurality of databases (see Yianilos et al. paragraph 0067).

As to claim 14, Yianilos et al. as modified teaches wherein said database value updater operates pursuant to a selected conflict resolution protocol (see Yianilos et al. paragraph 0082).

As to claim 21, Yianilos et al. method for synchronizing a database on a network with a database on a mobile node, the method comprising:

creating first hash information pursuant to a first technique, the first hash information being representative of values contained in the mobile node's database (see paragraph 0083, "Get_Interval_Hashes");

communicating the first hash information to the network node (see paragraph 0080, "two databases are assumed to be located on different processors connected via a limited bandwidth link");

receiving at a request detector coupled to receiver circuitry of the mobile node a request from the network for second hash information when the network determines, based at least on the first hash information, that the database on the network and the database on the mobile node are out-of-match (see paragraph 0083, "Get_All_Hashes"); and

creating the second hash information pursuant to a second technique (see paragraph 0067 and 0083); [and]

wherein the first technique is less computationally-intensive than the second technique and the first hash information requires less communication channel capacity than the second hash information (see paragraph 0083, where computing one hash for a plurality of records

requires less computation and communication bandwidth than computing a hash for each record individually).

Yianilos et al. does not distinctly disclose extensible markup language (XML) databases on the network or on the mobile node.

McCullough teaches this, see column 5, lines 16-29. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Yianilos et al. to include the teachings of McCullough because these teachings would allow for the use of XML to store and access data on the mobile devices.

Yianilos et al. still does not distinctly disclose a plurality of databases, but this is simply a multiplication of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have multiple databases to provide areas for storing different types of information since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.* Alternatively, Yianilos et al. teaches synchronizing based on a range of memory addresses which can be a single file or a raw disk environment. When synchronizing based on memory addresses, it would be obvious multiple databases (XML files) that are stored in the memory blocks of a mobile device would be synchronized (see paragraphs 0014-0016).

As to claim 22, Yianilos et al. teaches a method comprising:

generating first hash information based upon first data contained in a database maintained at a mobile node in response to a synchronization trigger, the first hash information comprising a hash of one or more key fields of a record of the database and a hash of one or more record fields

of the record (see paragraph 0083 and see paragraph 0013, periodically the synchronization is triggered);

communicating the first hash information (see paragraph 0083);

being delivered a request for second hash information when the first hash information is indicative of a mismatch condition (see paragraph 0083, partition the key range into smaller intervals, Get_Interval_Hashes function);

forming the second hash information in response to the request (see paragraph 0083);

being communicated a fetch request from the second hash information is indicative of a change to data of which the second hash information is representative (see paragraph 0085); and

returning third data as requested in the fetch request (see paragraph 0081).

Yianilos et al. does not distinctly disclose communicating by an air interface.

McCullough teaches communicating by an air interface (see figure 1, reference numbers 107A, 107B, 108A, 108B, and 108C and see column 5, lines 3-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Yianilos et al. to include the teachings of McCullough because these teachings would allow databases on a cellular telephone to be synchronized with a database across a network.

Yianilos et al. still does not distinctly disclose a plurality of databases, but this is simply a multiplication of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have multiple databases to provide areas for storing different types of information since it has been held that mere duplication of the essential working parts of

a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.*
Alternatively, Yianilos et al. teaches synchronizing based on a range of memory addresses which
can be a single file or a raw disk environment. When synchronizing based on memory addresses,
it would be obvious multiple databases (XML files) that are stored in the memory blocks of a
mobile device would be synchronized (see paragraphs 0014-0016).

As to claim 24, Yianilos et al. as modified, teaches where in first hash information is
based upon first data contained in two or more databases maintained at the mobile node (see
Yianilos et al., paragraph 0016, "single, preallocated file or in a raw disk environment").

As to claim 25, Yianilos et al. as modified, teaches further comprising generating a
synchronization trigger at the mobile node (see paragraph 0013).

As to claim 26, Yianilos et al. as modified, teaches further comprising being delivered a
synchronization trigger (see paragraph 0013).

As to claim 28, Yianilos et al. as modified, teaches wherein the communicating the first
hash information to the network node further comprises communicating the first hash
information to the network node in a single transmission on an air interface (see Yianilos et al.,
paragraph 0081, "fixed size digest" and see McCullough, figure 1).

As to claim 29, the applicant is referred to claim 28 above.

Allowable Subject Matter

5.   Claim 23 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6.   Applicant's arguments filed 12 April 2010 have been fully considered but they are not persuasive.

In response to the applicant's arguments that Yianilos does not disclose creating a hash over all of the databases, the arguments have been considered, but are not deemed persuasive. On of ordinary skill in the art would recognize that Yianilos teaches synchronizing databases or blocks on disks using similar methods. First a large range of blocks in on a disk or records in a database are selected, and a hash is created of this. Then a smaller range is selected if it is determined by comparing hashes from two separate databases that the large range is out of sync. This is in order to determine exactly what part of the larger range has changed. Further one having ordinary skill in the art would recognize that a range of blocks could contain multiple files including all of the database files (for instance two XML files) that need synchronizing. This simply would be determining an optimum range has been held to only require routine skill

in the art. See In re Aller, 105 USPQ 233. Further, the intervals of the hashes (to determine the second hash range) is also a determining of optimum range.

Applicant suggests that the second hash is only created for those records that are determined to be mismatched (see page 10). However, applicant's claims do not identify that the first hash that is taken can determine what part of the database is out of sync and therefore indicate what part of the database the second hash value should be taken from. Claim 1 states that the second hash is created when "the first hash value does not match the network copy of the first hash value." And does not indicate that he first hash can determine what records the second hash should be taken from.

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jacob F. Bétit whose telephone number is (571)272-4075. The

examiner can normally be reached on Monday through Friday 9:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tony Mahmoudi can be reached on (571) 272-4078. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

/Jacob F Bétit/
Primary Examiner, Art Unit 2169

jfb
19 Jul 2010